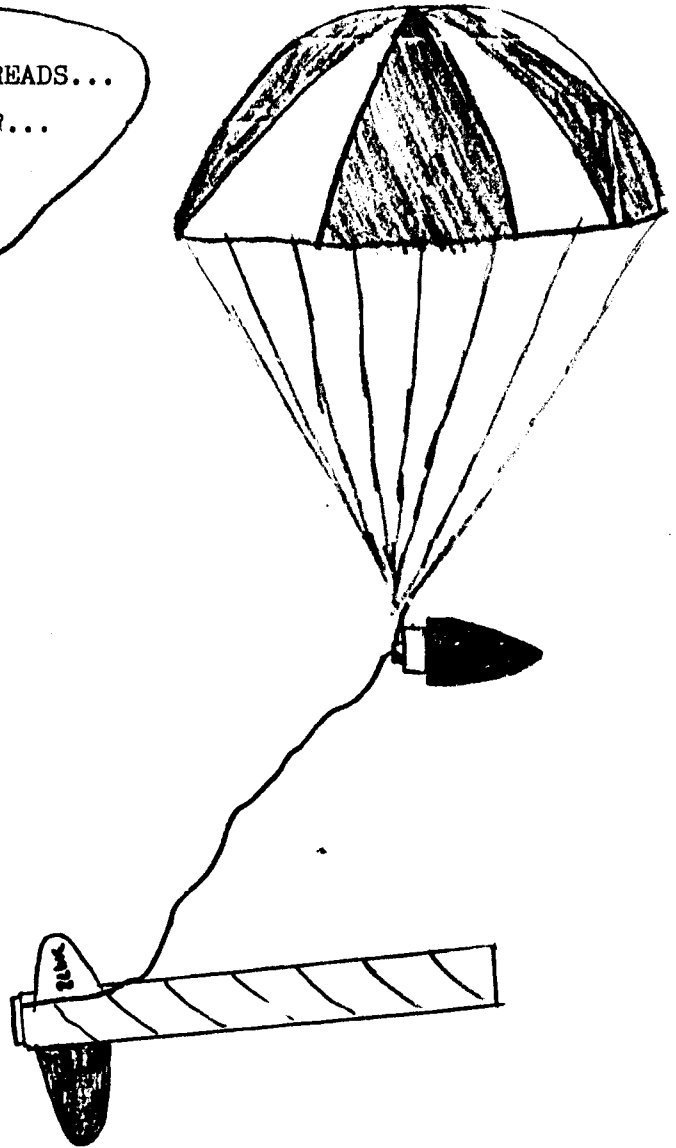
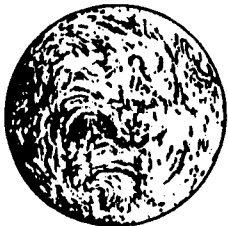
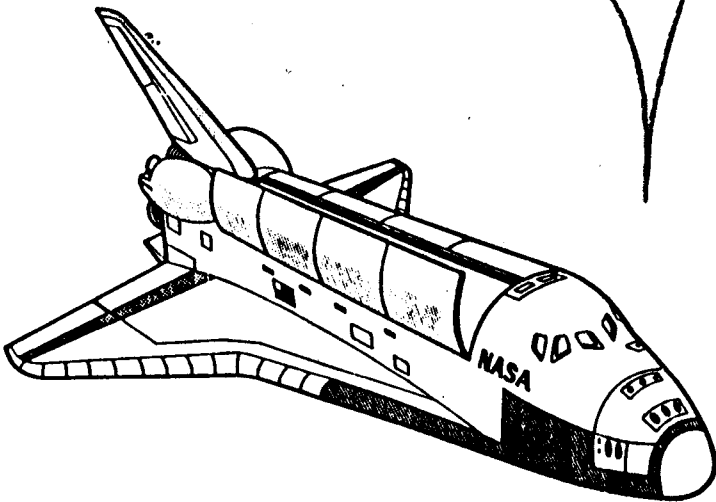


THE SOUTHERN PENNSYLVANIA AREA
ASSOCIATION OF ROCKETRY

COUNTDOWN

VOLUME 2 NO 1
JUNE '89

UH, HOUSTON.... THE INSCRIPTION READS...
EN..AY..ARE....THREE...ONE...FOUR...
SEVEN...TWO...???!!I???



The SPAAR Countdown

Volume 2, #1

June, 1989

THIS MONTH:

May was a very busy month for SPAAR..... Page 1
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The SPAAR Countdown is the official newsletter of the Southern Pa. Area Association Of Rocketry, NAR Section #503, PO Box 127, Reamstown, Pa., 17567, and is intended for the use and enjoyment of the members of SPAAR and subscribers. Any resemblance to anything intelligent or meaningful is purely coincidental. Those who caused the problem this month: George "The Helo-Monster" Beever; Ed "can you K-power a boost/glider?" Miller, and Glenn "Pass the Corn-Nuts please" Feveryear.

!!!!LATE NEWS!!!!

As this issue is published, some late news has been learned concerning the Section Meet scheduled for July 23: first, it has an official name, SPAARSEC 1. Second, even though we flew A Streamer Duration on April 16 as a practice event, the event to be flown at SPAARSEC 1 will be $\frac{1}{2}$ A Streamer Duration, multi-round. Third, the Predicted Duration event must be the first event flown by any contestant, due to the nature of the event; after that, the choice of what to fly is up to the contestant. Of course, contestants may fly as many or as few events as they wish. As decided previously, the meet fee will be \$2 for C Division members, and \$1 for B Division members; since A Division will fly their own contest, there will be no fee for them.

A few helpful hints: If possible, bring some sort of shade; the July sun can be very hot, and spending an entire day in the sun without some shade can have some painful results! Try to bring a cooler with cold drinks, such as water, fruit juice, or a "thirst quencher" type drink. Bring a lunch; if you don't prefer the "brown bag" route, there are a number of sandwich shops in the Denver-Realmstown area.

The range will open at 9 AM sharp, and close at 5 PM sharper. The rain date will be the following Sunday, July 30. If you have any questions, contact Contest Director Glenn Feveryear or George Beever.

Remember, the scheduled events are: $\frac{1}{2}$ A PD, $\frac{1}{2}$ A SD multi, B SuperRoc, C Eggloft, $\frac{1}{2}$ A B/G, B SD, and Predicted Duration.

A representative of the Chester County Board of Parks and Recreation called after reading a recent newspaper article on SPAAR, and asked if we could put on a demo for a Summer Festival to be held at the Warwick County Park on June 24. The festival has a "flying" theme, with appearances by a sky-diving club, a R/C model aircraft club, and a demonstration by a real helicopter. Unfortunately, the notice was rather short, and a demo by the club is not possible. However, we will be included in the program for next year.

If you have any suggestions for workshops or other winter club activities for the winter of 1989-90, contact Activities Committee Chairman Dale Greene.

COMING NEXT MONTH: WUBBA 12 coverage; Manufacturer Review; Flight Log; C SuperRoc Duration design, and anything else anyone cares to submit!!

A BUSY MONTH OF MAY!

SPAAR had it's busiest month by far during this past May, when two Section launches bracketed a demonstration launch, which was given on the 20th of the month.

The demo, organized by Section Advisor John Yost, was put on for the benefit and enjoyment of a large group of Cub Scouts on May 20, at Muddy Run State Park along Rt. 372 in southern Lancaster County.

SPAAR members Dan Weinhold, Ed Miller, Daniel and Derek Yost, helped John explain and demonstrate model rocket safety, launch, and recovery procedures for the assembled Scouts. The only sad part of the demo was the fact that Dan Weinhold lost three of his models in the trees near the launch sight. Hopefully, this will be the first in a series of demo launches put on by SPAAR.

Earlier in the month, on the 7th to be exact, a regular Section launch was held at Cocalico High School. A good group of flyers showed up, and braved the early May weather, which was it's usual cold, windy self. The practice event for the day was C Eggloft Duration, which is always interesting. "Til the race was run", a total of 38 flights had been made, before increasing winds and blue fingers put an end to the flying. (You call this Spring?) The two highlights (?) of the day were John Yost's C Eggloft flight, which disappeared from view at 1:49.43; only problem was, he never got it back. Ironically, John was determined to correct his chute deployment problems which had plagued him at NICE - 9 the previous month in Virginia. Needless to say, he did.

The other "highlight" was Glenn Feveryear's "core sampling mission" flown with the infamous Grumpy Dog. As usual, "The Dog" turned in a fire & smoke lift-off, staged perfectly, and arced over right on time.... and kept on coming. Talk about "Heads UP!!" in the range-head area! The video footage shot by Mark Snyder on this "flight of the old dog" is a must for lovers of horror flicks. Fortunately, Glenn reports that the "Dog" is repaired, good as new, albeit a little shorter.

Glenn did redeem himself by capturing a good first place in C Eggloft at 39 seconds, barely nosing out sport flyer extraordinaire Rick Hackman, who turned in a solid 37.5 seconds with the venerable "Here's Hopin".

Another interesting flight was Ed Miller's "Vapor-Roc", which has ports along the upper portion of the body for the discharge of multi-colored powders; in this case, red and blue. Ed always seems to have something new to bring to the launch field!

Some very nice sport models were flown, including Mark Snyder's "GEO SAT LV", and MRC Sidewinder, and Dale Greene's Super Big Bertha; some antiques were flown, including Dale's 1970 vintage MPC Nike-Smoke, and Rick Hackman's Estes Gyroc.

May 28 saw the second Section Launch of the month, again at Cocalico. The temperature was a little warmer, but... well, if SPAAR shows up, you know it's going to be windy! Despite the wind and not one, but two nearby softball/baseball games, a total of 51 flights left the pads. Practice competition events scheduled were $\frac{1}{2}$ A B/G and B Superroc Duration. The wind, of course, played havoc with both.

Prospective new member Aaron Newman had a good number of sport flights. He stated that this was his first experience in flying with a large group. Aaron won't be around this summer, but his friendliness and enthusiasm make us hope he comes back to us in the fall. Glenn Feveryear brought the Grumpy Dog back out, just to show everyone that this 'Dog really doesn't bite, and turned in a beautiful 102 second flight.

But the star of the day was none other than Ed "Real men fly F100's" Miller. After clearing up some ignition problems, Ed's minimum diameter F100-10 powered Warp Drive screamed off the pad, with a sound that some people likened to a bed sheet ripping! One second it was there, the next, it wasn't! After deploying it's streamer at max altitude, it landed close to the launch area. The rocket appeared none the worse for wear, but I'm sure it scared the socks off of the nearby girl's softball team. (I think Ed planned it that way) Following this, Ed flew his Hercules, built from the FSI kit, with an F100-6 in the tail. This flight was launched accidentally; everyone's eyes were on the rocket which was on the adjoining pad. No problems, the Herc' turned in a nice flight.

Glenn Feveryear took both practice events, with a 57 second $\frac{1}{2}$ A B/G flight, and a nice 870 points in B Superroc. Despite the wind, which really whipped the long Superroc birds around on the pads, 7 flyers flew 9 flights in this event.

What a month!!

FLIGHT LOG

Date: May 7, 1989

Flight #	Name	Rocket	Motor	Event	Dur.	Miss
1	M. Snyder	Nova	B6-4	Sport	19.0	no chute
2	M. Snyder	TransStar Carrier	B8-5	Sport	27.0	CF
3	D. Greene	Mike-Smoke	B8-5	Sport	24.5	CF
4	J. Rhoat	Scout II	A6-2	Sport	10.0	CF
5	D. Greene	Wizard	A6-2	Sport	7.3	CF
6	E. Miller	Vapor-Roc	D12-7	Sport	42.0	CF
7	H. Hackman	Der Red Max	A8-3	Sport	8.3	CF
8	V. Rhoat	Wizard	B4-4	Sport	34.5	CF
9	E. Miller	Competitor	A8-3	Sport	10.7	no deploy
10	E. Miller	Lancer	B6-4	Sport	26.0	CF
11	H. Hackman	Icarus	A8-3	Sport	27.0	CF
12	E. Miller	Mike-Smoke	B6-4	Sport	15.7	CF
13	R. Hackman	Cyroc	B4-2	Sport	4.0	unstable
14	M. Snyder	CEO SAT LV	B4-4	Sport	8.4	CF
15	M. Snyder	CEO SAT LV	C5-3	Sport	41.5	CF
16	E. Miller	Birdie	A3-2	Sport	3.0	CF
17	R. Hackman	Birdie	A3-2	Sport	5.2	CF
18	D. Greene	SuperBig Bertha	D12-5	Sport	12.0	no deploy
19	E. Miller	Dandit	B6-4	Sport	7.4	unk
20	H. Hackman	HanJet Interceptor	D12-5	Sport	11.8	no deploy
21	G. Beaver	X-15	A10-3	Sport	9.5	CF
22	H. Hackman	XR-21	A3-4	Sport	8.6	CF
23	Unl' Yost	Birdie	A3-2	Sport	7.4	CF
24	Drk' Yost	Birdie	A3-2	Sport	5.6	CF
25	G. Feveryear	Grumpy Dog	D12-0/D12-3	Sport	unk	no deploy
26	H. Hackman	XR-26	A8-3	Sport	16.0	no deploy
27	G. Beaver	Hotshot	A8-5	Sport	34.9	CF
28	H. Hackman	XR-31	A3-4	Sport	10.5	CF
29	G. Feveryear	B SD	B4-6	Sport/B SD	49.0	CF
30	M. Snyder	Sidewinder	B6-4	Sport	13.3	CF
31	M. Snyder	Sidewinder	C6-5	Sport	42.1	CF
32	H. Hackman	XR-27	A6-2	Sport	4.3	unstable
33	H. Hackman	Here's Hopin'	C6-3	C ELD	37.6	CF
34	J. Yost		C6-5	C ELD	109.4	no return
35	M. Snyder		C5-3	C ELD	22.2	shred
36	G. Beaver		C6-3	C ELD	24.9	shred
37	G. Beaver		C5-3	C ELD	29.8	CF
38	G. Feveryear		C5-3	C ELD	39.0	CF

Date: May 28, 1989

Flight #	Name	Rocket	Motor	Event	Dur.	Miss
1	M. Snyder	Honest John	A8-3	Sport	unk	CF
2	E. Miller	Wizard	A8-3	Sport	16.1	CF
3	M. Snyder	V-2	D12-3	Sport	51.9	CF
4	E. Miller	Vapor-Roc	C6-5	Sport	22.8	CF
5	A. Newman	Star Spedder	B6-4	Sport	17.8	CF
6	E. Miller	Vapor-Roc	D12-7	Sport	33.9	CF
7	A. Newman	Mini Mars Lander	A3-4	Sport	9.9	CF
8	D. Greene	Wizard	A8-5	Sport	17.5	CF
9	A. Newman	Hercules	C6-0/A8-5	Sport	28.2	sep.
10	A. Newman	CEO SAT LV	B6-4	Sport	5.8	CF
11	A. Newman	Mach Rider	B4-4	Sport	6.4	CF
12	A. Newman	Stealth	B4-4	Sport	9.2	CF
13	A. Newman	Stealth	B4-4	Sport	10.6	CF
14	E. Miller	Warp Drive	F100-10	Sport	42.9	CF
15	G. Beaver	Mercury-Redstone	C5-3	Sport	9.8	no deploy
16	J. Rhoat	A SH	A8-3	Sport/A SR	7.8	unk
17	E. Miller	Hercules	F100-6	Sport	42.9	CF
18	D. Greene	Honest John	B6-4	Sport	23.7	CF
19	G. Beaver	Rota-Roc	B6-2	Sport/B MD	34.0	CF
20	E. Miller	SuperBig Bertha	D12-5	Sport	10.1	CF
21	G. Feveryear	Grumpy Dog	D12-0/D12-3	Sport	102.9	CF
22	V. Rhoat	Nova Payloader	B6-4	Sport	D4	no dep.
23	D. Greene	Cemini-Fltan	A8-3	Sport	9.7	CF
24	M. Snyder	C ELD	C6-3	Sport/U ELD	D4	no deploy
25	E. Miller	Phoenix	D12-3	Sport	unk	CF
26	D. Greene	Mike-Smoke	C6-5	Sport	28.8	CF
27	E. Miller	Jupiter-U	C5-3	Sport/NAFHREK	40.0	CF
28	G. Beaver	Der V-3	D12-5	Sport	55.0	CF
29	M. Snyder	Viking I	B4-4	Sport	35.5	CF
30	G. Beaver	Wizard	B6-6	Sport/NAFHREK	41.2	CF
31	M. Snyder	Pathfinder	D12-5	Sport	56.3	lost
32	E. Miller	AstroCam 110	C6-7	Sport/NAFHREK	18.7	CF
33	G. Feveryear	B R/G	B4-2	Sport/B R/G	59.5	lost
34	E. Miller	AstroCam 110	C6-5	Sport/NAFHREK	25.8	CF
35	G. Beaver	Bullpup 12D	A8-3	Sport	10.9	CF
36	E. Miller	AstroCam 110	C6-7	Sport/NAFHREK	18.2	CF
37	E. Miller	AstroCam 110	B8-5	Sport/NAFHREK	unk	CF
38	G. Beaver	DragonFly	A3-2	"	37.6	CF
39	M. Snyder	DragonFly	A3-2	"	D4	Hod Thron
40	J. Yost		A3-2	"	D4	shred
41	A. Newman	DragonFly	A3-2	"	7.2	
42	G. Feveryear		A3-2	"	57.0	CF
43	D. Rhoat		B6-4	B SRD	8.84	
44	M. Snyder		B6-4	"	73.34	CF
45	D. Greene		B6-4	"	17.0	CF
46	G. Feveryear		B6-4	"	36.1	CF
47	G. Feveryear		B6-4	"	34.6	CF
48	G. Beaver		B4-4	"	23.69	CF
49	J. Yost		B4-2	"	D4	
50	J. Yost		B4-4	"	D4	
51	V. Rhoat		B4-2	"	D4	

MEETING MINUTES

SPAAR held it's monthly meeting on Monday, May 15, at the Lancaster Library. The meeting began at 7 PM. Members present: John Yost, Bill Rhoat, Dick Rhoat, Ed Miller, Dan Weinhold, Glenn Feveryear, & George Beever.

Section Advisor's Report: John Yost read to the members a letter from NAR President J. Pat Miller concerning the insurance situation. John also read to the members a letter from Art Rose requesting help for range duties at the US Team fly-offs, July 2-3. This is to determine the make-up of the US Team that will travel to the USSR in 1990. John then read and discussed a letter that he had received from Mary Roberts of Estes, which outlined the "Estes Build-up Program", and a number of members expressed interest.

Competition Report: Glenn Feveryear discussed to results of the C Logoft Duration flown on May 7, as well as the upcoming WUBBA Regional Meet, June 16-17, and the SPAAR Section Meet, scheduled for July 23.

Treasurer's Report: Ed Miller reports that as of 5/15/89, there is a balance of \$164.59 in the General Fund. General discussion followed, and the meeting adjourned at 9 PM. The next meeting will be on Monday, June 18, at 9 PM.

A name is still needed for the SPAAR Section Meet, to be held on July 23. Send your ideas and suggestions to Glenn Feveryear, Box 1-C, RD#1, Delta, Pa., 17314.

SPAAR GOES TO FLORIDA!!! (well, at least the Countdown does). Raymond A. Horn, 7015 Filbert Ln Tampa, Fla., 33637-5738, has decided to subscribe to this newsletter as a non-member. Thanks, Ray. Maybe you could share some of your model rocket experiences with us folks up north!!

PRACTICE EVENT RESULTS, MAY 1989

C EGGLOFT DURATION, May 7, 1989		Flight #2	Total	Place
Flyer	Flight #1			
H. Hackman	37.5	XX	37.5	2
J. Yost	109.4 DQ No return	XX	XX	X
M. Snyder	22.2 DQ	XX	XX	X
G. Beaver	DQ	29.8	29.8	3
G. Feveryear	37.0	XX	39.0	1

JA BOOST/GLIDE, May 28, 1989

G. Beaver	37.6	XX	37.6	2
M. Snyder	6.7 DQ Red Baron	XX	XX	X
J. Yost	9.1 DQ	XX	XX	X
A. Newman	7.2	XX	7.2	4
G. Feveryear	57.0	XX	57.0	1

B SUPERROC DURATION, May 28, 1989

Flyer	Flight #1	Flight #2	Static Points	Total Pts	Place
D. Rhoad	8.04	XX	200	408	5
M. Snyder	73.74	XX	192	467	2
D. Greene	17.00	XX	200	417	4
G. Feveryear	36.1	34.6	200	870	1
G. Beaver	23.69	XX	200	423	3
J. Yost	13.52 DQ	3.72 DQ	200	XX	X
W. Rhoad	14.9 DQ	XX	146	XX	X

PLANS GO FORWARD FOR SECTION MEET

Mark it down on your calendars. SPAAR will hold it's first NAR sanctioned event, a Section Meet, on July 23 at Cocalico High School, Denver. The range will open at 9 AM and close at 5 PM.

Events to be flown are: $\frac{1}{2}$ A Parachute Duration, A Streamer Duration Multi-round, $\frac{1}{2}$ A Boost/Glide, B Superroc Duration, C Eggloft Duration, B Streamer Duration, and Predicted Duration.

As many of you know, we have been flying these events on a "practice" basis during our regular Section Launches this year, in order to give everyone a taste of competition flying.

In addition, several articles have appeared in this newsletter, with ideas and tips regarding various events, and a competition plan or two has even appeared.

If you haven't flown any of the practice events, don't let that stop you from flying the Section Meet. If you haven't had that much luck, don't let that stop you, either!

In regards to the C Eggloft event, the club will provide the eggs; we did not during the practice round.

Also, Contest Director Glenn Feveryear needs all of the help that he can get, in setting up the range on that Sunday morning. Please pitch in and help in any way you can. That also goes for other range operations duties such as timing, safety check in, etc.

As decided at the Section meeting on May 15, for contest purposes, "B" and "C" Divisions will be combined, since it appears that there won't be any "A" Division members participating, they will have their own contest!

All SPAAR "A" Division members, those that are 14 years of age or under, will have the chance to fly "18 mm $\frac{1}{2}$ A Streamer Duration - Commercially Available Kit Division" (say that 10 times fast!) What this involves is using a kit model, modeler's choice, and a standard size $\frac{1}{2}$ A6-2 motor, provided by the club, in a streamer duration event! One flight per "A" Division contestant, best flight time wins.

Sport flying is welcome; come and spend the day!

TECH TIP

by Ed Miller

How many times has a plastic parachute lost a shroud line or failed to unfold for you? It's happened to me plenty of times! Usually, your rocket is damaged upon landing. One remedy is the use of nylon parachutes. They almost certainly never fail to unfold, and probably never break.

One drawback, however, is the cost. Nylon chutes are more expensive than plastic ones, but as the saying goes, "you get what you pay for"! Either way, the price of a nylon chute outweighs the cost of a crashed expensive kit.

Most model rocket manufacturers these days market nylon chutes. The most notable exception is Estes Industries. Flight Systems, North Coast Rocketry, LOC/Precision, Space Dynamics, Celestial Enterprises and Rocket Research all offer nylon parachutes. Prices range from \$3 on up. Sizes range from 12" to 96".

Nylon parachutes do not pack as tightly as plastic chutes, so you do have to allow for more room. For example, a BT-55 size tube is needed for a 12" nylon chute. In addition, don't forget the wadding! Nylon chutes will melt from hot ejection gases just like the plastic ones!

SPAAR CLASSIFIEDS

WANTED: Info wanted on missing persons, known locally as "The Infamous Flying Wenrich Bros." Last seen "some time ago" at a SPAAR sport launch. Older brother Dave doesn't say much, younger brother Jess says even less. Dave has been known to say: "Go get it Jess", or words to that effect. If located, contact this newsletter.

LOST & FOUND DEPT: In the Denver area, one C Egglofter and one $\frac{1}{2}$ A PD model, lost May 7 and June 11, respectively. The chute packer requested in this column last issue really worked! Now I just want my rockets back! Contact John Yost.

SECTION NEWS NOTES

Please add the following new members to your membership rosters:
Fredrick A. Hoke, 968 Jay St., Lebanon, Pa., 17042, 717-272-2409. Fred answered one of Ed Miller's membership flyers, placed in the Rail Fence Hobby Shop in Cleona. Fred is 49 and is just beginning in model rocketry. Welcome, Fred, and we hope that we can be of service and help to you, as you get your start in this hobby!

A second new member is Robert A. Stott, Box 206, Richboro, Pa., 18954. Robert is a member of the Garden State Spacemodeling Society, and has been involved in model rocketry for 20 years. If you attend the business meetings and have seen the GSSS newsletter, "The Launch Rack", you've probably seen Robert's work: he has done a number of cartoons and articles for that newsletter. Welcome to you, too, Robert, and we hope to see you soon!

The launching procedure worked out by Glenn Feveryear and adopted as of May 7 appears to be working out just fine. Mark Snyder has volunteered to be Launch Control Officer for the July 2 Sport Launch, but someone is needed to give Mark a break for an hour or so that day. In addition, volunteers are needed for the LCO post and relief position for the Sport Launches in August, September, and October. Contact Range Operations Chairman John Yost if you can help. Thanks!

Don't forget the commemorative Saturn V launches to kick off the Section Meet on July 23. These launches will help celebrate the 20th anniversary of the Apollo 11 moon landing. If you have a flyable Saturn V, by all means bring it!

All of you competition types should make note of the following upcoming meets, scheduled for this fall, and put on by NOVAAR:
Saturday, September 9, 1989, 9 AM to 6 PM: ECEG - 3, the East Coast Boost/Glider meet #3;
Events to be flown: A Flew-wing, multi-round; C Rocket/Glide; $\frac{1}{2}$ A Rocket/Glide; A Boost/Glide; and D Boost/Glide.

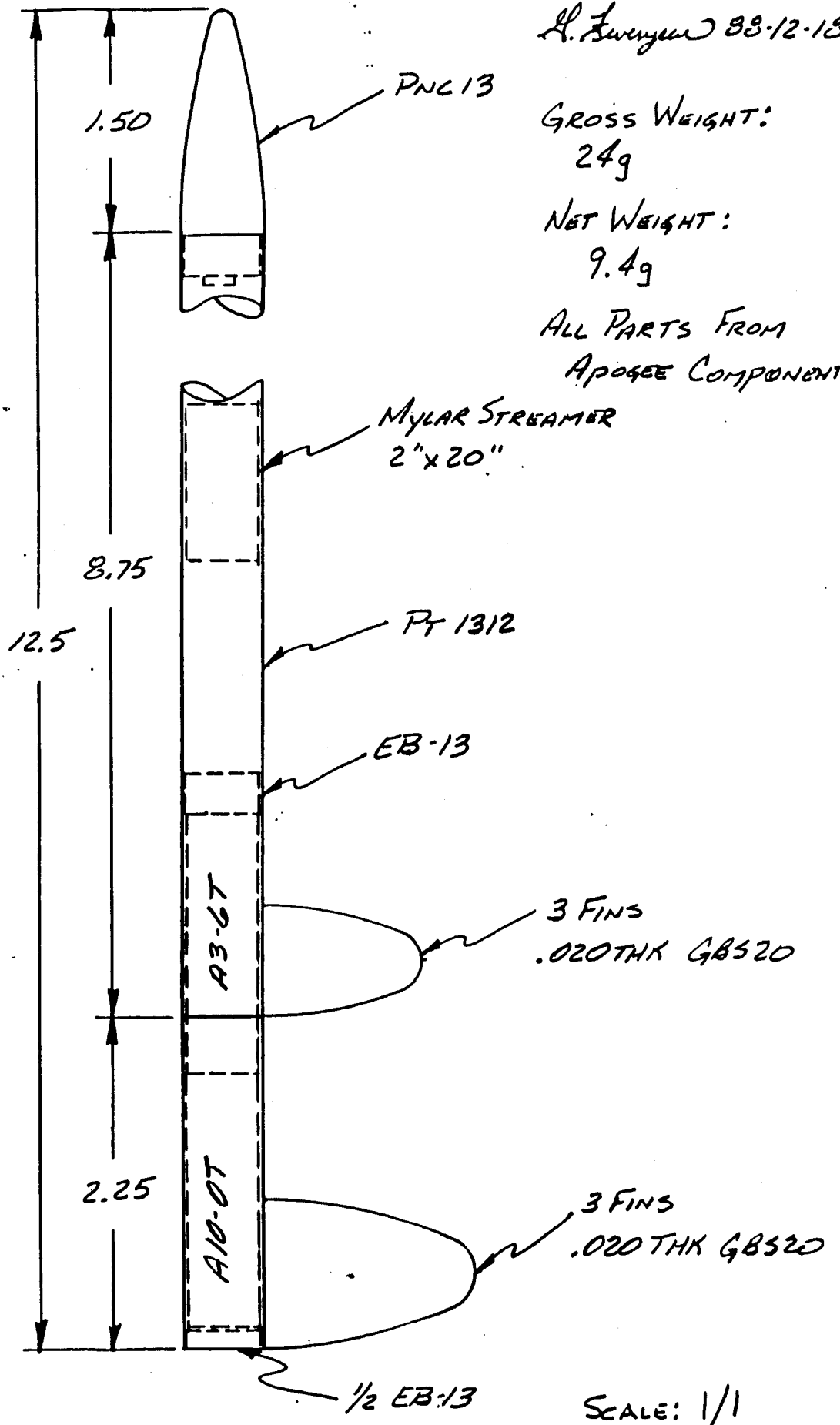
Sunday, October 15, 1989, 9 AM to 6 PM: VACUUM - 15.
Events to be flown: $\frac{1}{2}$ A Streamer Duration, multi-round; A Parachute Duration, multi-round; B Helicopter Duration; A Superroc Altitude; D Dual Eggloft; and B Payload.

If you've attended a SPAAR sport launch, you must have noticed that Rick Hackman is always taking pictures of something. Now Rick has worked out a system to make some of those photos available in such a way that everyone, including the club, comes out ahead! Contact Rick for more details.

Speaking of pictures, some of you may have noticed a Denver Boro policeman taking some shots at a couple of the latest sport launches. That fellow is John DePaul, who took the photos for an article that he has written on SPAAR and model rocketry in general for a local paper called The Tri-County Shoppers News. It's a very nice article, and free publicity for SPAAR. And besides, it included a picture of Ed "I wish I had a K powered AstroCan" Miller. For copies of the article, contact George Beaver.

B. ALTITUDE

A. Swinney 88-12-18



GROSS WEIGHT:
24g

NET WEIGHT:
9.4g

ALL PARTS FROM
APOGEE COMPONENTS

3 FINS
.020 THK GB520

3 FINS
.020 THK GB520

SCALE: 1/1

Most of the rocket kits that we are familiar with use a length of contest rubber for a shock cord. Rubber shock cords are somewhat reliable, but they have three major defects. First: the shock cords supplied with most commercial kits are too short; second, the rubber is too springy. After nose cone ejection, the nose will sometimes snap back against the rocket body causing some type of damage. Third, rubber, after time, has a tendency to become brittle and break.

One remedy for this situation is to use banded elastic or polyester elastic. It can be obtained in stores where sewing supplies are sold. Elastic usually comes in packs of three or more yards, for about eighty cents. It can even be purchased in 50 yard spools. Elastic comes in widths of many sizes, including 1/8", 1/4", and 3/8". Elastic is only about half as springy as rubber, and will not break.

If elastic has a fault, it's that it is somewhat bulky and stiff. Don't try to use it in 18mm (BT-20 size) tubes or smaller. A 24mm (BT-50) tube can handle a 1/8" wide elastic shock cord, however even this will be tight. Kevlar cord is a better choice for rockets up to 24mm size. Larger rockets can use a 1/4" elastic cord, up to two feet long. Larger sizes and widths should be used in larger, high power rockets because of their increased weight and mass.

If the elastic shock cord will not fit into the rocket body, try stuffing it into the plastic blow molded nose cone (only if your model has one, of course!). This will slow down the spring action of the shock cord even more, and increase the stability of the rocket even more by placing some weight forward.

THE SPAAR RECORD BOOK

Updated thru June 11, 1989

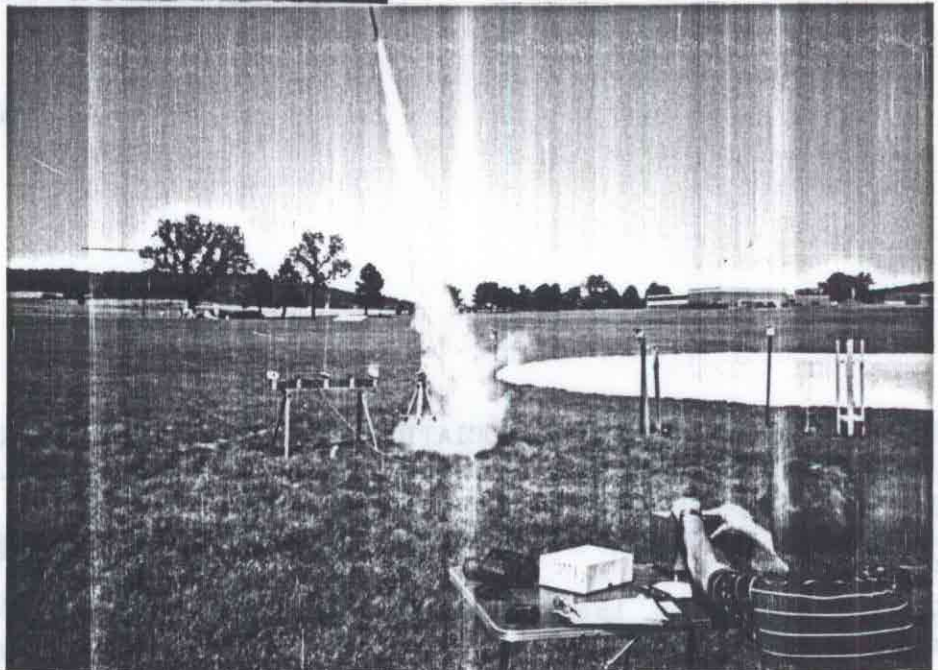
<u>EVENT</u>	<u>NAME</u>	<u>MODEL</u>	<u>MOTOR</u>	<u>TIME</u>	<u>DATE</u>
1/2 A PD	John Yost	unk	1/2 A3-4	129.6	6-11-89 *
A PD	George Beever	Mighty Moe	A6-5	40.8	8-14-88
B PD	Mark Snyder	Alpha	B6-4	98.4	7-3-88
C PD	Dick Rhoat	DART	C6-3	65.0	4-16-89 *@
D PD	Ed Miller	Gone	D12-7	83.7	10-30-88
E PD	Ed Miller	Hercules	E60-6	24.0	4-16-89 *
F PD	Ed Miller	Hercules	F100-6	42.9	5-28-89 *
1/2 A SD	George Beever..	T-Bird	1/2 A3-4	36.1	12-18-88
A SD	Glenn Feveryear	unk	A3-4	120.0	4-16-89 *
B SD	Dick Rhoat	unk	B4-4	115.0	6-11-89 *
C SD	Dave Bender	Excalibur	C6-7	39.5	12-18-88
D SD	OPEN				
E SD	OPEN				
F SD	Ed Miller	Warp Drive	F100-10	46.8	5-28-89 *
C Eggloft	Glenn Feveryear	Egg Thing	C6-3	156.0	10-9-88
1/2 A Helo	John Yost	Mini RotaRoc	1/2 A3-2	42.7	12-4-88
A Helo	Glenn Feveryear	Helix	A10-3	29.7	4-16-89 *
B Helo	George Beever	RotaRoc	B6-2	34.0	5-28-89 *
1/2 A B/G	Glenn Feveryear	unk	1/2 A3-2	57.0	5-28-89 *
B R/G	Glenn Feveryear	Gull	B4-2	154.0	10-30-89
B SuperRoc	Glenn Feveryear	unk	870 points, two flights		5-28-89 *

* - New Record; *@ - New record, old record retired due to former record holder no longer active. In addition, after 1 July 1989, all SPAAR record flights will conform with NAR return requirement, meaning that in order for a flight to be considered a record, the rocket must be returned.

LEFT: THE SPAAR DISPLAY IN THE WINDOW OF SMITTY'S HOBBY SHOP, MANOR SHOPPING CENTER, LANCASTER, FEBRUARY, 1989

Left to right: Glenn Feveryear's Estes Jupiter-C, John Yost's D RG, Ed Miller's Rainmaker and SDI, George Beever's V-2, Space Shuttle, and FSI OSO, Dan Yost's Ninja, John's converted Eggspress, and Glenn's altitude and Streamer Duration models

RIGHT: MARK SNYDER LAUNCHES ED MILLER'S F100 POWERED "WARP DRIVE", MAY 28



LEFT: SMILIN' JOHN YOST WITH HIS 1/2A BOOST/GLIDER, MAY 28



OL

S.P.A.A.R.
P. O. Box 127
Reamstown, PA 17567

FROM:

THE SOUTHERN PENNSYLVANIA AREA ASSOCIATION OF ROCKETRY, NAR SECTION #503, PO Box 127,
Reamstown, Pa., 17567. Schedule of events:
July 2: Section Sport Launch, Cocalico High School,
Denver, Pa., 1 PM to 5 PM; Practice Event, Predicted
Duration.

July 17: Section Meeting, Lancaster Library, N. Duke St.,
7 PM to 9 PM. New members welcome.

July 23: SPAARSEC 1; Section Meet, Cocalico High School,
Denver, Pa., 9 AM to 5 PM; $\frac{1}{2}$ A PD, $\frac{1}{2}$ A SD multi, C ELD,
 $\frac{1}{2}$ A B/G, B SuperRoc, B SD, Predicted Duration. Special
launch of Saturn V models to commemorate the 20th anni-
versary of the Apollo 11 moon landing.

August 13: Section Sport Launch, Cocalico High School,
Denver, Pa., 1 PM to 5 PM; Practice Event, C SRD.

August 21: Section Meeting, Lancaster Library, N. Duke St.,
7 PM to 9 PM. New members welcome.

September 3: Section Sport Launch, Cocalico High School,
Denver, Pa., 1 PM to 5 PM. Practice Event, B ELD.

September 18: Section Meeting, Lancaster Library, N. Duke St.,
7 PM to 9 PM. New members welcome.

MEMBERSHIP APPLICATION

NAME: _____

ADDRESS: _____

AGE: _____ DOB: _____

PHONE: _____

NAR#: _____

I HAVE BEEN FLYING MODEL ROCKETS
_____ YEARS/MONTHS

I HAVE NEVER FLOWN A MODEL ROCKETS
BEFORE _____

DUES: 18 or over: \$10/year _____

15, 16, 17 years old: \$7/year _____

14 years old & under: \$5/year _____

Return to: SPAAR, PO Box 127,

Reamstown, Pa., 17567